

Psychosocial Stress Among Healthcare Workers in Rwanda: A Narrative Review

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ABSTRACT

Background: Psychosocial stress is a major occupational health issue worldwide, and it is especially severe among healthcare workers (HCWs) in resource-limited and post-conflict environments like Rwanda. Despite widespread acknowledgement of the burden, there is limited and fragmented evidence regarding its prevalence, contributing factors, and effective interventions for Rwandan HCWs.

Methods: This narrative review incorporated 35 peer reviewed studies, published from 2000 to 2025, which were retrieved from PubMed, CINAHL, and Web of Science. The inclusion criteria for studies mandated an examination of psycho-social stress, burnout, anxiety, depression, or post-traumatic stress disorder (PTSD) within healthcare workers (HCWs) in Rwanda or comparable low and middle income country (LMIC) contexts. Thematic synthesis was employed across five key domains: prevalence, risk factors, coping strategies, organizational interventions, and health outcomes.

Results: The analysis indicated that Rwandan healthcare workers (HCWs) experienced considerable psychological and social distress. Specifically, over half of the HCWs at King Faisal Hospital reported burnout. In addition, 80% of the intensive care unit (ICU) nurses reported experiencing moderate to high levels of workplace stress. Major risk factors included high workloads, shortages of staff and medication, workplace violence, stigma, and lingering trauma from the 1994 genocide. Although adaptive coping mechanisms, including social support networks and religious practices, were frequently employed, maladaptive approaches such as alcohol consumption were also documented. Organizational interventions, such as mindfulness based programs, show potential; however, they necessitate cultural adaptation due to Rwanda's predominant stigma and resource limitations.

Conclusion: Psychosocial stress affects HCWs' mental health, job performance, and the safety of the patients. This poses a substantial threat to Rwanda's healthcare system. There is an urgent need for culturally informed, scalable interventions and policy measures to safeguard HCW well-being and foster a resilient health workforce in Rwanda.

BACKGROUND

Psychosocial stress, defined as the interaction between an individual and the working environment, is a significant global concern that affects workers worldwide.¹ It is especially prevalent among healthcare workers (HCWs), in whom it manifests as a range of mental health issues such as burnout, emotional exhaustion, anxiety, depression, and post-traumatic stress disorder (PTSD). Burnout is defined as emotional exhaustion, depersonalization, and decreased personal accomplishment in response to chronic job stress.²

Anxiety is characterized by prolonged, intense worrying, and depression by long-lasting low mood and loss of interest in activities, while for PTSD, there are intrusive phenomena, hyperarousal and avoidance behaviors due to the traumatic experience.³ Worldwide, healthcare workers experience disproportionately high levels of psychosocial distress. A narrative review of sub-Saharan Africa (SSA) documented depression prevalence ranging from

16.3% to 71.9%, anxiety from 21.9% to 73.5%, work related stress from 15.5% to 63.7%, and PTSD from 51.6% to 56.8% among HCWs during the COVID-19 pandemic.⁴ In Nigeria, a systematic review and meta-analysis found a psychosocial stress prevalence of 61.97% among HCWs.⁵ Such conditions are substantial risks to the mental and emotional health of HCWs, leading to poor performance, reduced quality of patient care, and considerable pressure on Rwanda's resource-limited healthcare system and its own specific post-conflict landscape.⁶

In SSA, the burden of psychosocial stress among HCWs is compounded by weak health systems, persistent understaffing, limited mental health infrastructure, and, in several countries, the enduring effects of conflict and displacement.⁷ Community health workers (CHWs) and frontline nurses, who constitute the backbone of primary care delivery, bear a disproportionate share of this burden, particularly in rural and under-resourced settings.⁸

Healthcare in Rwanda is functioning under exception-

nal circumstances, underpinned by the lasting legacy of the 1994 genocide against the Tutsi, with deep psychological scars among the population, including HCWs, and a high prevalence of PTSD and depression.⁹ The healthcare system continues to contend with multiple (micro and macro) level factors, including chronic short-staffing, lack of medical supplies, and overwhelming workloads, particularly in the rural setting, which make for a stressful working environment among HCWs.¹⁰

Challenges were, however, heightened during the time of the COVID-19 pandemic, as fear of infection, Personal Protective Equipment (PPE) shortages, and social stigma from communities that viewed HCWs as carriers of the virus were some of the challenges.⁴ In Rwanda, nurses and CHWs, at the core of care delivery during COVID-19, are especially vulnerable, with as many as 56.2% of CHWs attributing stress to inadequate training and supervision during the COVID-19 lockdown.¹⁰ Despite the considerable magnitude of this burden, Rwanda-specific data on psychosocial stress among healthcare workers remains scarce and fragmented, particularly on rural personnel and non-nursing categories. The antecedents, trajectories, and effective interventions for this condition within the Rwandan setting are inadequately defined, representing a significant knowledge gap.

This narrative review consolidated available evidence regarding the prevalence, associated risk factors, coping mechanisms used, and interventions and health outcomes of psychosocial stress among HCWs in Rwanda. A narrative review approach was deliberately used to facilitate a flexible and contextually sensitive synthesis of diverse evidence encompassing qualitative, cross-sectional, and review studies within Rwanda's distinct context, where the quantity and uniformity of primary data don't currently substantiate formal systematic review methods.¹¹ This review seeks to provide evidence-based insights for policymakers and healthcare executives, aiming to guide culturally acceptable and scalable actions that enhance HCW well-being and strengthen the resilience of Rwanda's health system.

METHODS

Study Design

This study employed a narrative review design. This approach was deliberately selected over a systematic review because of the heterogeneity of available study designs, the limited volume of Rwanda-specific primary data, and the need for a contextually flexible synthesis that could incorporate qualitative, cross-sectional, and review-level evidence within Rwanda's unique post-conflict, resource-limited context. The narrative approach permitted the examination of a broader body of literature and the critical interpretation of transferability, which is essential given that many findings are derived from non-Rwandan settings.

Search Strategies and Databases

A structured literature search was conducted across PubMed, CINAHL, and Web of Science, and the publication dates ranged from 2000 to 2025 to encompass contemporary issues, including the post-genocide recovery and the impact of the COVID-19 pandemic. Studies were chosen based on their relevance to the review's themes of

prevalence, risk factors, coping techniques, interventions, and health outcomes, rather than through a rigorous systematic screening methodology. A total of 35 peer reviewed articles contributed to the synthesis, augmented by regional and worldwide evidence in the absence of Rwanda specific data.

Inclusion and Exclusion Criteria

Studies were included if they: (I) examined psychosocial stress, burnout, anxiety, depression, or PTSD; (II) focused on HCWs or allied HCWs; (III) were conducted in Rwanda, supplemented by data where Rwandan data is lacking, and the data were comparable to low- and middle-income countries or SSA; and (IV) were peer reviewed and published in English. Studies were excluded if they missed the above criteria, lacked adequate methodological reporting, or were published outside the defined time frame.

A total of thirty five peer reviewed papers met the inclusion criteria and were organized thematically: prevalence (10 papers), risk factors (7 papers), coping strategies and interventions (10 articles), and health outcomes (8 articles). Two reviewers (A.S. and N.J.) independently evaluated the titles and abstracts for eligibility after the search. Full texts of possibly eligible papers were subsequently obtained and evaluated against the inclusion criteria. M.J. resolved disagreements to reach a consensus.

Data Extraction and Quality Assessment

Data were thematically retrieved by two reviewers and categorized under the four aforementioned categories. Methodological quality was evaluated descriptively, taking into account study design, sample size, demographic representativeness, and generalizability to the Rwandan setting. The quality characteristics guided the interpretation of data and the robustness of conclusions, rather than acting as formal criteria for inclusion and exclusion. The synthesis documented and recognized the constraints of individual studies, including limited sample sizes, cross-sectional methodologies, and possible selection bias, where relevant. Rwandan studies were prioritized; non-Rwandan research from comparable LMIC or SSA contexts was included only in the absence of Rwanda specific data; their relevance was critically evaluated in relation to Rwanda's healthcare infrastructure, sociocultural setting, and post conflict history, with necessary conditions noted.

RESULTS

Overview of Included Studies

The 35 included studies were published between 2001 and 2025, with the majority published after 2019. Study designs included cross-sectional surveys, narrative and scoping reviews, systematic reviews and meta-analyses, and mixed-methods studies. HCW populations represented included nurses, physicians, ICU workers, CHWs, and oncology nurses. Seven studies were Rwanda-specific, supplemented by evidence from Nigeria, Ethiopia, Uganda, and sub-Saharan Africa broadly. Most Rwanda specific studies were conducted in urban tertiary facilities.

Prevalence of Psychosocial Stress Prevalence Rates

The high prevalence of psychosocial distress in HCWs in Rwanda and sub-Saharan Africa is concerning and reflects the intense stress of delivering care in low-resource settings. In Rwanda, a cross-sectional study conducted in King Faisal Hospital revealed that more than 50% of HCWs, especially doctors, nurses, and midwives, had experienced burnout and compassion fatigue, with nurses responsible for the highest percentages¹¹. Research on ICU workers in University Teaching Hospitals of Rwanda, similarly, found that 80% experienced moderate to high workplace stress.¹²

Researchers have derived limited data on anxiety, depression, and PTSD in the context of Rwanda, but they have studied these conditions in the broader context of sub-Saharan Africa. For example, a narrative review from the region found that depression rates ranged from 16.3 to 71.9%, anxiety rates from 21.9 to 73.5%, work-related stress rates from 15.5 to 63.7%, and PTSD rates from 51.6 to 56.8% among HCWs during the COVID-19 pandemic.⁴ These occurrences suggest that Rwandan HCWs probably experience similar difficulties related to resource limitations and pandemic stressors.

In Nigeria, a review and meta-analysis found a psychosocial stress prevalence of 61.97% among HCWs, with both urban nurses and doctors in urban hospitals reporting higher values owing to high workloads.⁵ In a scoping review of CHWs in low and middle income countries (LMICs) in Eastern & Southern Africa, higher rates of depression, anxiety, and burnout were reported during the COVID-19 pandemic crisis due to higher demands and lack of resources.⁸ In Rwanda, CHWs also experienced similar stressors, including 56.2% of CHWs who felt that they received minimal preparation and monitoring support during the lockdown from COVID-19, and that personal stress and exhaustion were entangled.¹⁰

Prevalence rates differ between professions and contexts. Nurses continually experience more burnout compared to doctors, probably because of their frontline positions and longer patient interaction.^{7,13} ICU nurses and CHWs in the rural setting of Rwanda have experienced higher stress levels, primarily linked to a high patient load and limited equipment.^{10,12} Urban institutions, including King Faisal Hospital, demonstrate high burnout rates as a result of the high acuity of care demands.

At the same time, rural CHWs experience unique stressors, such as transportation challenges and community stigma,^{10,11} which can exacerbate their overall job-related stress and contribute to higher burnout rates compared to their urban counterparts. Drawbacks in design, such as low sample sizes (e.g., 63 oncology nurses) and descriptive cross-sectional research, do not allow exact quantification concerning the prevalence.¹⁴ Furthermore, the studies being cross-sectional in Rwanda limit understanding of stress trajectories through time. Evidence extrapolated from non-Rwanda studies should be interpreted cautiously, as differences in healthcare systems, workforce composition, and socio-cultural context may mean that regional prevalence estimates do not accurately reflect the Rwandan situation and may overestimate burden in some contexts.

Risk Factors for Psychosocial Stress Occupational Factors

Rwandan HCWs' psychosocial stress is rooted in a dynamic interaction between occupational, psychosocial, and environmental determinants, which are compounded by the country's post conflict, resource scarce setting. Many of the reviewed studies identify heavy workloads as a prominent work-related risk factor. In Rwanda, two of the most common problems reported by ICU nurses were caring for patients who were suffering or near death, as well as dealing with dysfunctional materials and equipment.¹² Likewise, CHWs also noted increasing workloads under the COVID-19 lockdown, in part due to the responsibility for a median of 55 households.¹⁰ Work overload and inadequate resources were also significant risk factors in Nigeria, and 61.97% of HCWs reported stress related to those items.⁵ One survey in Ethiopia also revealed that nurses who work over 8 hours daily were at a higher risk of burnout, which is likely applicable to Rwanda because of the shortage of staff.¹³ (Table 1)

Psychological and Social Factors

Other stressors, including workplace violence and discrimination, also increase stress. Workplace violence, particularly verbal abuse, resulted in psychological distress and inability to concentrate for 58.5% of nurses at a university teaching hospital in Rwanda.¹⁵ The stigma, especially amidst the COVID-19 pandemic, was an important source of stress, with HCWs fearing social isolation associated with being at risk of the virus.^{4,16} A worldwide systematic review found female sex, younger age, and less social support to be risk factors for psychological distress and that nurses, as well as frontline workers, were particularly susceptible.¹⁷ Stigmatizing attitudes towards mental health experiences were more frequently present among CHWs with lower education levels in Rwanda, whereby self-stigma and help-seeking reluctance could be deepened, leading to increased psychological distress and reduced access to mental health resources for affected individuals.¹⁸

Environmental and Contextual Factors

Environmental exposures, including insufficient PPE and inadequate facility infrastructure, were crucial in the era of COVID-19. In this regard, 44% of healthcare workers (HCWs) in Uganda experienced psychological distress due to a lack of personal protective equipment (PPE) and fear of infection; this issue was also reported by community health workers (CHWs) from Rwanda, who noted that obtaining supplies was more difficult during the lockdown. The post-genocide situation in Rwanda introduces specific risks for HCWs, who may bring traumatic memories that are negatively associated with Health-Related Quality of Life (HRQoL).¹⁹ Low mental health coverage, despite a high prevalence of disorders such as PTSD, also increases vulnerability, particularly for healthcare workers who may struggle to cope with their own mental health issues while providing care to others affected by the trauma.⁹

Resource limited post conflict settings in Rwanda exacerbate these risk factors. Continuing understaffing and equipment deficits correspond to sub-Saharan African studies, where negative work environments and conflict are the basis of burnout.^{7,20} However, generalization

TABLE 1: Summary of Psychosocial Stress Prevalence Across Reviewed Studies

Author, Year	Country/setting	Study Design	HCW population	Key prevalence findings
Nyirigira et al., 2025	Rwanda (King Faisal Hospital)	Cross-sectional	Doctors, nurses, midwives	>50% burnout and compassion fatigue
Munyanziza et al., 2021	Rwanda University Teaching Hospitals	Cross-sectional	ICU nurses	80% moderate-to-high workplace stress
Niyigena et al., 2022	Rwanda (community level)	Mixed methods	CHWs	56.2% reported inadequate training/supervision-related stress
Oyat et al., 2022	SSA	Narrative review	All HCWs	Depression 16.3-71.9%; Anxiety 21.9-73.5%; PTSD 51.6-56.8%
Ndulue et al., 2021	LMICs- East and Southern Africa	Scoping review	CHWs	Elevated burnout, anxiety, depression during COVID-19
Dechasa et al., 2021	Ethiopia	Cross sectional	Nurses	Higher burnout risk among nurses working >8 hours/day
Eche et al., 2022	Multi-country (COVID-19)	Cross sectional	Oncology nurses (n=63)	Psychological distress and reduced quality of work-life

from non-Rwandan studies may be challenging due to differences in cultural valuation of mental health and the maturity of healthcare services. For example, urban focused studies from Nigeria are likely to inadequately capture the difficulties documented in rural Rwanda, namely, the transportation obstacles of CHWs.¹⁰ The presence of Rwanda-specific data gaps, especially regarding rural HCWs and non-nurse occupations, points to research needs. Ethical imperatives to reduce mental health stigma in Rwanda further emphasize the need to minimize these risks for the well-being and delivery of patient care by HCWs. (Table 2)

Strategies for Coping and Intervention Individual Coping Mechanisms

HCWs in Rwanda and similar low-resource contexts used individual and organizational strategies to address psychosocial stress. One type of personal coping mechanism includes problem-focused and emotion focused coping. In Rwanda, ICU nurses described utilizing social support from friends, religious activities, and, less frequently, alcohol consumption to mediate their stress at work, such as managing excessive workloads and experiencing a lack of equipment.¹² These results are consistent with a more general review of sub-Saharan Africa, where it was observed that HCWs employed both problem-focused (e.g., seeking training) and emotion-focused (e.g., social support) responses to cope with stress in the context of the COVID-19 response.⁴ Conversely, maladaptive strategies, including alcohol consumption, were also documented and raise concern for long-term effects on mental health, particularly in a post-conflict society with limited mental health provision.⁹ These categories of coping, adaptive and maladaptive, frequently coexist within individuals, highlighting the

necessity for therapies that bolster constructive coping while addressing detrimental behaviors.

Organizational Interventions

Organizational interventions show potential but can be difficult to implement in resource-limited settings, such as Rwanda, where limited access to resources and training can hinder their services, particularly in addressing the high prevalence of disorders among healthcare workers (HCWs) and improving their overall well-being. Meta-analytic evidence found that mindfulness-based interventions reduced stress and improved mental well-being for HCWs worldwide, while evidence supporting the reduction of burnout, anxiety, and depression was inconsistent.²¹

In Rwanda, people frequently stigmatize mental health conditions, which may create barriers to the uptake of formal clinical interventions, such as mindfulness-based interventions that could otherwise help reduce stress and improve mental well-being. Adaptations of Mindfulness-Based Interventions (MBIs) to incorporate culturally appropriate practices, such as community-based support networks, cooperative groups, and religious activities, may improve acceptability and adherence.¹⁸

A protocol for a randomized controlled trial of a mobile health (mHealth) intervention demonstrated potential for digital tools for stress management to facilitate self-efficacy, which may be applicable in Rwanda, given increased technology and an increase in the use of smartphones, particularly among young adults who are increasingly reliant on mobile applications for health-related support.²² However, the restricted internet services in rural areas and the low digital literacy levels among community health workers (CHWs) may limit and hinder

the scale-up process, making it challenging to effectively implement the health intervention and reach the target population in those regions.¹⁰

Culturally Adapted Approaches

Another approach includes resiliency training and Cognitive Behavioral Therapy (CBT). A global systematic review concluded that CBT and relaxation training were more effective than no treatment in reducing stress, but low evidence quality was found primarily due to small sample sizes and risk of bias.²³ Available evidence suggests that resilience training represents an important consideration in dealing with post-genocide trauma and workplace stress in Rwanda; however, delivery must be culturally sensitive and appropriately contextualized to overcome entrenched stigma.²⁴ Another meta-analysis of interventions for clinical nurses revealed that the face to face mindfulness program reduced emotional exhaustion and depersonalization and improved personal accomplishment.²⁵ Organizational strategies, including the provision of adequate human and material resources, structured stress management training, and improvement of nurse-to-patient ratios, are anticipated to improve coping, particularly among ICU nurses exposed to high workloads.¹²

Resource and cultural limitations on intervention may exist in Rwanda. For example, community health workers reported a lack of training and supervision during the COVID-19 lockdown, emphasizing that interventions should focus on scalable, low-cost strategies such as peer support groups.^{26,10} A pilot trial testing virtual-reality (VR) interventions for the alleviation of moral distress demonstrated the feasibility but lack of significant stress relief, suggesting high-tech interventions may not be feasible in low-resource settings in Rwanda, particularly due to limited access to technology and trained personnel to implement such interventions effectively.²⁷ Instead, using already established community organizations, for instance, religious or cooperative groups, might help in increasing intervention uptake and in addressing mental health stigma.¹⁸ (Table 3)

Health and Performance Impacts Mental Health Outcomes

Psychosocial stress among HCWs in Rwanda has substantial mental health implications. In Rwanda, 80% of ICU nurses experienced moderate-to-high stress along with symptoms of fatigue, confusion, and mood swings.¹² Depression, anxiety, burnout, and PTSD are the most prevalent manifestations, with nurses and CHWs bearing a disproportionate share of this burden. Physical symptoms such as neck and back pain, in addition to

headache, have also been documented in comparable CHW populations in studies from regions like Nigeria and could also apply to Rwanda, with similar workload pressures.²⁸

Among frontline health care workers from seven Eastern African nations, including Rwanda, depression, insomnia, and trauma related symptoms were associated with health-related quality of life (HRQOL), thereby exacerbating mental health challenges.¹⁹ Rwanda's post genocide context offers an additional perspective: HCWs may be more psychologically vulnerable due to preexisting personal trauma that interacts with work related pressures, which can exacerbate their mental health issues and negatively impact their overall well-being and job performance.²⁴

Job Performance and Patient Safety

Psychosocial stress has a severely detrimental effect on job performance. Violence in the workplace (experienced by 58.5% of nurses in Rwanda) has resulted in psychological harm, reduced concentration, and inadequate service performance.¹⁵ A global scoping review associated the psychological well-being of HCWs with the quality of patient care,^{6,29} with stressed HCWs being more likely to make errors and having diminished levels of empathy.

In Rwanda, where nurses are essential to the health system infrastructure, stress-related burnout raises nurses' intentions to leave, jeopardizing health system sustainability through an exacerbation of turnover intentions caused by decades of understaffing.¹¹ One such study conducted a systematic review and found a negative relationship between job stress and patient safety culture, stating that stressed nurses are prone to errors, something that complicates patient safety culture in the very healthcare facilities of Rwanda, which require securing quality health care.^{30,31}

Workforce Retention

In Rwanda, where nurses are essential to the health system's infrastructure, stress-related burnout greatly increases nurses' intent to quit their jobs. This exacerbates decades of understaffing and jeopardizes the viability of the healthcare system.⁸ High rates of burnout among nurses and CHWs are described in sub-Saharan African studies, compromising workforce planning and patient safety.^{7,32} Low utilization of mental health services, despite the high prevalence of disorders, indicates that it is time for system-level interventions to improve the well-being of HCWs and ensure the sustainability of healthcare delivery.⁹

TABLE 2: Summarized Risk Factors for Psychosocial Stress				
Category	Specific Factor	Description	Evidence (Author, Year)	Relevance to Rwanda
Occupational	Heavy Workload	High patient load, understaffing, long shifts (>8 hours/day)	Munyanziza et al., 2021 Dechasa et al., 2021	ICU nurses, rural CHWs, and resource scarcity
Occupational	Lack of equipment/supplies	Dysfunctional materials, insufficient PPE, and medication shortages	Munyanziza et al., 2021	Reported across Rwandan public facilities and CHW networks.
Psychological/Social	Workplace Violence	Verbal abuse causes distress and reduced concentration	Musengamana et al., 2021	58.5% of nurses were affected at the University Teaching Hospital of Rwanda
Psychological/Social	COVID-19 stigma	HCWs regarded as COVID-19 carriers; social isolation	Oyat et al., 2022; Migisha et al., 2021	Reports have been made both in Rwanda and Uganda during the pandemic.
Psychological/Social	Mental health stigma	Self-stigma and help-seeking reluctance, mostly among lower-educated CHWs	Baziga et al., 2020	Rwanda-specific barrier to intervention uptake
Psychological/Social	Individual vulnerability	Female sex, younger age, and low social support	Arias-Ulloa et al., 2023	Nurses and frontline workers are particularly susceptible
Environmental/contextual	Post-genocide trauma	HCWs carry traumatic memories affecting HRQoL	Nzigiyimana et al., 2023; Firmin & Niyomugabo, 2011	Rwanda-specific; exacerbates occupational stress
Environmental/contextual	Low mental health coverage	High disorder prevalence but low utilization of services	Kayitenshonga et al., 2022	Rwanda-specific; systematic gap in mental health service delivery
Environmental/contextual	Rural/geographical barriers	Transportation challenges, community stigma in rural settings	Niyigena et al., 2022	Relevant to Rwanda's rural CHW network

TABLE 3: Summary of Intervention Types and Evidence Levels				
Intervention type	Study (Author, year)	Evidence level	Key findings	Applicability to Rwanda
Mindfulness-based interventions	Benavides-Gil et al., 2024	Moderate (systematic review)	Reduced stress and improved well-being; inconsistent for burnout/anxiety	Requires cultural adaptation; stigma is a barrier to community-based delivery; recommended
mHealth/digital stress Tools	Baumann et al.,2023	Low-Moderate (RCT protocol only)	Feasibility and acceptability	Rural internet access and digital literacy are barriers
Continue				

TABLE 3: Continued				
Intervention type	Study (Author, year)	Evidence level	Key findings	Applicability to Rwanda
Cognitive Behavioral Therapy/relaxation Training	De Giorgi & Dinkelaar, 2021	Low-Moderate (small samples, potential bias)	demonstrated; efficacy data pending	to scale-up
Face-to-face mindfulness for nurses	Lee & Cha, 2023 (meta-analysis)	Moderate	More effective than no treatment; evidence quality limited	Requires trained facilitators; culturally sensitive delivery needed
Peer support groups	Nshimiyiryo et al., 2021	Low	Reduced emotional exhaustion and depersonalization	Feasible in urban hospital settings with trained staff
Virtual reality interventions	Espinola et al., 2024	Very low (pilot study)	Scalable, low-cost; supports coping during crises	High applicability; leverages existing community cooperative structures
Resilience/ trauma-informed training	Firmin & Niyomugabo, 2011	Expert opinion/ narrative	Feasible, but no significant stress reduction was demonstrated	Not feasible in low-resource settings
			Potentially important for the post-genocide trauma context	High relevance to Rwanda; culturally sensitive delivery essential

DISCUSSION

This narrative review, which integrates findings from five thematic domains: prevalence, risk factors, coping methods, interventions, and health outcomes, represents the first comprehensive synthesis of research on psychosocial stress among Rwandan healthcare workers. This study contributes a Rwandan interpretative perspective to the body of literature by critically analyzing which regional and global evidence may be applied to Rwanda's conflict and resource-constrained environment and identifying evidence gaps that demand focused primary research.

This review confirms a clinically significant burden of psychosocial distress among Rwandan HCWs. The combination of psychosocial and occupational stressors and Rwanda's specific post-genocide trauma generates a multilayer vulnerability that is not adequately captured by regional or global data alone. The above has demonstrated a high burden of psychosocial distress, as >50% of HCWs from King Faisal Hospital reported burnout, and >80% of ICU nurses reported moderate to high stress,^{11,12} suggesting that the absence of longitudinal and rural data means that the full national burden is likely underestimated. Risk factors were attributed to heavy work, lack of PPE, workplace violence, stigma, and the post-conflict, resource-scarce environment of Rwanda.^{5,15}

While HCWs use coping strategies such as social support and religion, maladaptive activities such as alcohol use are also concerning among them, particularly as these behaviors may exacerbate the stress and health issues related to the challenging work environment and risk factors they face, including burnout and emotional exhaustion.^{12,33} Interventions including mindfulness and mHealth, appear promising but need modification to accommodate Rwanda's cultural and resource limitations,^{21,22} particularly to ensure they are effective in addressing the specific mental health challenges faced by the population, such as high levels of stress and trauma from past conflicts. Health effects: the consequences for mental health, job performance, and patient safety are substantial and documented in this review, which is particularly relevant to the Rwandan health care system.^{30,34}

Comparison With Other Regions

Rwanda's findings are broadly consistent with SSA documenting high levels of stress, particularly among nurses and CHWs; there are few locally derived data, especially for rural areas and for non-nurse occupations.^{7,35} However, while studies in sub-Saharan Africa have provided valuable insights, they also raise concerns about transferability due to differences in health care infrastructure and cultural attitudes toward mental illness. For example, Nigeria's urban-specific prevalence estimations might not control for stress overestimation in Rwanda's rural areas with transportation barriers and community stigma.^{5,10} Research from South Africa and Uganda offers more relevant comparisons regarding post conflict dynamics and healthcare infrastructure; however, direct applicability is constrained by pronounced cultural disparities in mental health help seeking behaviors, including differing stigma levels and access to mental

health resources in these areas.¹⁶ On a global scale, COVID-19 consistently elevated distress rates across all healthcare settings, but Rwanda's post-genocide trauma adds a historical dimension that is absent from most similar studies.⁹ This difference makes it imperative to conduct Rwanda specific primary research rather than adopting regional data.

Implications for Policy and Practice

The review's findings have direct implications for both health policy and clinical practice in Rwanda. The post-genocide environment's resource constraints exacerbate psychosocial stress, and HCWs must manage both personal historical trauma and professional expectations at the same time,²⁴ which can hinder their ability to provide effective care and support to patients in need. Mitigating mental health stigma among CHWs with lower educational qualifications is both an ethical obligation and a practical requirement for effective intervention adoption.¹⁸

The following are recommended for policymakers: (I) integration of mental health screening and support into standard practice of HCW occupational health programs; (II) staff policy modification to mitigate chronic work and move toward recommended nurse-to-patient ratios; (III) decentralization of mental health services to district and health center levels to improve accessibility, especially in rural regions; and (IV) incorporation of psychosocial stress management into pre-service training curricula for all HCW categories.

Interventions at the practice level must emphasize culturally tailored, scalable, and cost effective solutions. Peer support groups and community based resilience programs utilizing cooperatives and religious frameworks, along with trauma informed treatment methodologies, constitute the most contextually suitable alternatives. Digital and mHealth tools may enhance these methods in urban environments with sufficient connectivity. Future research priorities encompass longitudinal studies of stress trajectories, randomized trials of culturally tailored therapies in the Rwandan context, and studies focused on under-researched demographics, including rural healthcare workers, physicians, and male healthcare workers.

Limitations

When understanding its conclusions, one must acknowledge certain limitations in this review. The bulk of studies specific to Rwanda utilized cross sectional study methods, which solely measure associations, hence inhibit causal inferences. Secondly, the sample sizes in various studies conducted in Rwanda are small, which diminishes confidence in the accuracy and generalizability of the stated prevalence estimates, especially with rural healthcare worker populations. The prevalence of urban, tertiary facility studies in Rwanda likely underrepresents the perspectives of rural community health professionals and primary care workers. Fourth, the majority of evidence about interventions originates from non-Rwanda environments, and the applicability of these findings to Rwanda's socio-cultural and resource context remains uncertain. Fifth, publication bias may lead to the underrepresentation of negative or null intervention

results, which could skew the overall understanding of the effectiveness of interventions in Rwanda. As a narrative review, synthesis is fundamentally interpretive and does not allow for quantitative pooling of results; readers should consider the findings as a structured evidence map rather than a statistical summary.

CONCLUSION Main Findings

This narrative review illustrates a significant and multifaceted burden of psychosocial stress among healthcare workers in Rwanda, stemming from the intersection of chronic occupational stress, socio-structural vulnerabilities, and the lasting psychological impact of the 1994 genocide against the Tutsi. Significant data reveal that burnout rates surpass 50% at King Faisal Hospital, moderate to high job stress affects 80% of ICU nurses, and pervasive stress among community health workers is associated with insufficient training, supervision, and resources. Adaptive coping techniques, including social support and religious involvement, are frequently utilized by healthcare workers facing high stress levels; nevertheless, maladaptive tactics, such as alcohol consumption, pose significant concerns for long-term mental health effects.

Key Implications

Psychosocial stress among Rwandan HCWs substantially undermines mental health, job performance, patient safety, and workforce retention. This jeopardizes the sustainability of Rwanda's healthcare system. The post-conflict environment exacerbates these impacts, resulting in an occupational burden that necessitates immediate, focused government intervention.

Priority Recommendations

The following are recommended priority actions;

- Integrate compulsory mental health screening and support into the standard practice of HCW occupational health programs
- Staff policy modification to mitigate chronic workload and move toward recommended nurse-to-patient ratios
- Expand community-based psychosocial programs that utilize existing cooperative and religious community frameworks for culturally appropriate implementation.
- Launch targeted anti-stigma campaigns to normalize mental health help-seeking among HCWs and CHWs.
- Allocate resources for longitudinal studies and the evaluation of culturally tailored interventions to build a Rwanda-specific evidence base for psychosocial stress interventions.

These recommendations will safeguard the mental health and well-being of Rwanda's healthcare staff, which is an ethical obligation and prerequisite for the provision of excellent care and the sustained resilience of Rwanda's health system.

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Peer Reviewed

Competing Interests: Authors declare no competing interest.

Funding: The study did not receive any funding.

Received: 26 October 2025 ; **Accepted:** 19 May 2026

Cite this article as Niyibizi J, Sam A, Mugisha J. Psychosocial Stress Among Healthcare Workers in Rwanda: A Narrative Review. *East Afr Health Res J.*2026;10(1):4-13. <https://doi.org/10.24248/eahrj.v10i1.865>

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